

*CLAIM AMENDMENTS*

1. (Original) A billiard cue comprising a shaft having a tip end and a butt end, wherein the shaft has a non-linear tapered section with reduced diameter compared to a linear tapering at the tip end.
2. (Original) The billiard cue as in claim 1, wherein said non-linear tapered section with reduced diameter extends until about 14 inches from the tip end.
3. (Original) The billiard cue as in claim 1, wherein the shaft further has a non-linear tapered section with increased diameter from about 14 inches from the tip end to about 29 inches from the tip end.
4. (Original) The billiard cue as in claim 1, wherein the shaft shows an increased flexibility at the tip end compared to a linearly tapered shaft.
5. (Currently Amended) A billiard cue comprising a shaft having a tip end and a butt end, wherein the diameter of the shaft from the tip end is in a Boltzmann function relation to the distance from the tip ~~end curve end~~ until ~~at about about~~ about half of the shaft.
- 6.-7. Cancelled.
8. (New) The billiard cue of claim 1, wherein the non-linear tapered section is not formed merely by surface roughness.
9. (New) The billiard cue of claim 1, wherein the non-linear tapered section comprises a continuously increasing diameter formed by a circular cross section over a plurality of inches.

10. (New) The billiard cue of claim 1, wherein the shaft comprises wood material.

11. (New) The billiard cue of claim 1, wherein the diameter continuously increases without decreasing throughout substantially between a length between the tip end and butt end.

12. (New) The billiard cue of claim 1, wherein the non-linear tapered section has a continuously curved profile relative to a length of the billiard cue.

13. (New) The billiard cue of claim 1, wherein said non-linear tapered section with reduced diameter extends until about 14 inches from the tip end, and wherein the shaft further has a non-linear tapered section with increased diameter from about 14 inches from the tip end to about 29 inches from the tip end.

14. (New) A billiard cue having a diameter variance relative to a traditional tapered cue having a linear tapered shaft, the billiard cue comprising: a shaft having a tip end and a butt end, wherein the shaft has a non-linear tapered front section proximate the tip end having a circular cross section, wherein the diameter of the shaft in the non-linear tapered front section is smaller compared to the diameter of a corresponding span of a linear tapered shaft measured from tip end and wherein the non-linear tapered front section comprises a first portion proximate the tip end and a second portion behind the first portion and remote from the tip end, wherein in the first portion the diameter thereof increases at a slower rate per unit length than the rate of increase of the diameter of the linear tapered shaft and in the second portion the diameter thereof increases at a faster rate per unit length than the rate of increase of the diameter of the linear tapered shaft thereby making the first portion flexible.

15. (New) The billiard cue of claim 14, further comprising a second non-linear tapered section behind the non-linear tapered front section and remote from the tip end, the second non-linear tapered section having a circular cross section wherein the diameter thereof is larger compared to the diameter of a corresponding span of the linear tapered shaft measured from tip end.

16. (New) The billiard cue of claim 14, wherein the non-linear tapered front section extends over about 14 inches from tip end.

17. (New) The billiard cue of claim 16, wherein the first portion extends over about 6 inches from tip end.

18. (New) The billiard cue of claim 14, wherein the non-linear tapered front section has a continuously curved profile relative to a length of the billiard cue over the first and second portions.

19. (New) A billiard cue having a mass distribution variance relative to a traditional tapered cue having a linear tapered shaft, the billiard cue comprising: a shaft having a tip end and a butt end, wherein the shaft has a flexible front section proximate the tip end, the flexible front section having a reduced mass compared to mass of a corresponding span of a linear tapered shaft measured from tip end; and a mass build-up section behind the flexible front section building up mass and thereby reducing flexibility more quickly than compared to a corresponding span of the linear tapered shaft, wherein the shaft has a flexible front section proximate the tip end and the flexible section and the mass build-up section each having a circular cross section

20. (New) The billiard cue of claim 19, further comprising a less flexible section behind the flexible front section and the mass build-up section, the flexible front section having a reduced mass compared to mass of a corresponding

span of a linear tapered shaft measured from tip end; the less flexible section having an increased mass compared to mass of a corresponding span of a linear tapered shaft measured from tip end.

21. (New) The billiard cue of claim 19, wherein the flexible section and the mass build-up section are created by a non-linear tapered periphery as the shaft extends from the tip end toward the butt end.

22. (New) The billiard cue of claim 21, wherein the non-linear tapered section comprises a continuously increasing diameter over a plurality of inches as the non-linear tapered section extends away from a tip of the billiard cue, and wherein the shaft comprises wood material, and wherein a diameter of the cue continuously increases without decreasing throughout substantially an entire length between the tip end and butt end.

23. (New) The billiard cue of claim 19, wherein the non-linear tapered section has a continuously curved profile relative to a length of the billiard cue over the flexible and mass build up sections.